

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Sang H. Moon et al.

Application No. 10/549,774

Confirmation No.: 7904

Filed: September 19, 2005

Art Unit: 4116

For: PALLADIUM-BASED CATALYST FOR  
SELECTIVE HYDROGENATION OF  
ACETYLENE

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Examiner: B. M. Martinez

**RESPONSE TO RESTRICTION REQUIREMENT**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the restriction requirement set forth in the Office Action mailed October 31, 2007, applicant hereby provisionally elects claim 12 for continued examination, with traverse.

The Examiner has required restriction between:

Group I, claim 12, drawn to a palladium catalyst;

Group II, claims 13-20, drawn to a process for preparing a palladium catalyst;

Group III, claim 21, drawn to a continuous process for the selective hydrogenation of acetylene to ethylene in the presence of a catalyst;

Group IV, claim 22, drawn to a method of using a palladium catalyst in the selective hydrogenation of acetylene.

The Commissioner may require restriction if two or more independent and distinct inventions are claimed in a single application (37 CFR 1.142(a)). In the present case, although the claimed subject matter may be classified in different classes, the inventions are not independent.

Applicants respectfully traverse the Restriction requirement because the U.S. Patent and Trademark Office has not carried forward its burden of proof to establish distinctness.

In particular, MPEP § 803 states:

If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to distinct or independent inventions.

The claims of the present invention would appear to be part of an overlapping search area.

Accordingly, Applicants respectfully traverse the outstanding Election requirement on the grounds that a search and examination of the entire application would not place a *serious* burden on the Examiner.

Furthermore, the Examiner has requested that the applicant elect one of groups I to IV, because in her opinion, the present application lacks unity. The Examiner has stated that unity is missing, because groups I to IV do not relate to a single general inventive concept under PCT rule 13.1. According to the Examiner, under PCT rule 13.2 the mentioned groups lack the same or corresponding special technical feature, because in the Examiner's opinion, this common technical feature is a palladium catalyst, which has already been disclosed in the prior art, for example US 5,847,250 ("Flick"). The applicant respectfully disagrees.

The applicant believes that the common technical feature of the present application is a palladium catalyst consisting of a support and in a first embodiment of palladium and lanthanum, in a second embodiment of palladium, titanium and potassium, and in a third embodiment, of palladium, of lanthanum and of silicon. The applicant believes that a palladium catalyst consisting of a support and of palladium and lanthanum, of palladium, titanium and potassium or of palladium, lanthanum and silicon, is not disclosed in Flick as cited by the Examiner.

Flick discloses silica-supported catalyst suitable for the selective hydrogenation of acetylene in hydrocarbonaceous streams, comprising palladium and at least one promoter metal of groups I and II of the periodic table, see abstract. According to column 2, lines 28 to 32 state:

Suitable promoter metals include alkali and alkaline earth metals such as lithium, sodium, potassium, rubidium, cesium, calcium, strontium and barium. **Of these, preference is given to rubidium, strontium and**

**barium, and very particular preference is given to potassium.**  
(emphasis added)

It is possible to apply not just one but more than one of the promoter metals mentioned.

In contrast to the disclosure of Flick, in the applicant's claim 12 of the present application a palladium catalyst is claimed consisting of support and (1) of palladium and lanthanum, (2) of palladium, titanium, and potassium or (3) of palladium and silicon. Flick does not disclose a palladium catalyst consisting of a support and of palladium and lanthanum, of palladium, titanium, and potassium or of palladium, lanthanum, and silicon. Although Flick discloses a catalyst comprising palladium and potassium, the cited document does not disclose a catalyst consisting of the support and of palladium, titanium and potassium. Therefore, the palladium catalyst which is claimed in claim 12 of the present application is not anticipated by Flick.

Therefore, from the applicant's point of view, as stated above, the common technical feature of the present application, palladium catalyst consisting of a support and in a first embodiment of palladium and lanthanum, in a second embodiment of palladium, titanium and potassium, and in a third embodiment, of palladium, of lanthanum and of silicon is not disclosed in Flick, and therefore, unity under PCT rule 13.2, is present.

For the above reasons, this restriction requirement should be withdrawn.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 13156-00018-US from which the undersigned is authorized to draw.

Dated: November 30, 2007

Respectfully submitted,

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